

Precalculus 2011-03-07

§5:
 1-5: B E C D B

6-10: A C C D E

11-15: B C C D E

16-20: A D A E E

Precalculus 2011-03-07

$$3-5/32 : \sqrt{x+3} - \sqrt[3]{x+3}$$

$$\begin{array}{ccc}
 & f(x) & g(x) & (f \circ g)(x) \\
 (x^{1/2} - x^{1/3}) & \frac{\sqrt{x} - \sqrt[3]{x}}{\sqrt[4]{x} - \sqrt[6]{x}} & \frac{x+3}{(x+3)^2} & \\
 \text{((x^{1/2})^{1/3})} & \text{((x^{1/2})^{1/2})} & \text{(x+3)^2} & \\
 x^{1/4} - x^{1/6} & \xrightarrow{x+3} & \xrightarrow{(1/2)} &
 \end{array}$$

(34) $K(x) = \sqrt[3]{(7x-3)^2}$

$f(x)$

$g(x)$

$(f \circ g)(x)$



$K(1) \Rightarrow \begin{matrix} \text{1} \\ \text{11} \end{matrix} \star \Rightarrow 7 \Rightarrow 7-3=4 \Rightarrow 16 \Rightarrow \sqrt[3]{16}$

$f(x)$

$\sqrt[3]{(x-3)^2}$

$g(x)$

$7x$
 $(7x-3)^2$

3.6/5

$$f(x) = x^3 - 3x^2 + 2$$

graph f and its inverse
in parametric mode

$$y = 3x - 2$$

$$(7, 19)$$

find the inverse

$$x = 3y - 2$$

$$x + 2 = 3y$$

$$\left(\frac{x+2}{3}\right) = y$$

$$(19, 7)$$

TRANSFORMATIONS

$$\sqrt{x} \longrightarrow -\sqrt{-\frac{1}{2}x+3}$$

$$\textcircled{1} \text{ reflect across } \underline{\text{y-axis}} \quad = -\sqrt{-\left(\frac{1}{2}x-3\right)}$$

$$= -\sqrt{-\left(\frac{1}{2}\right)(x-6)}$$

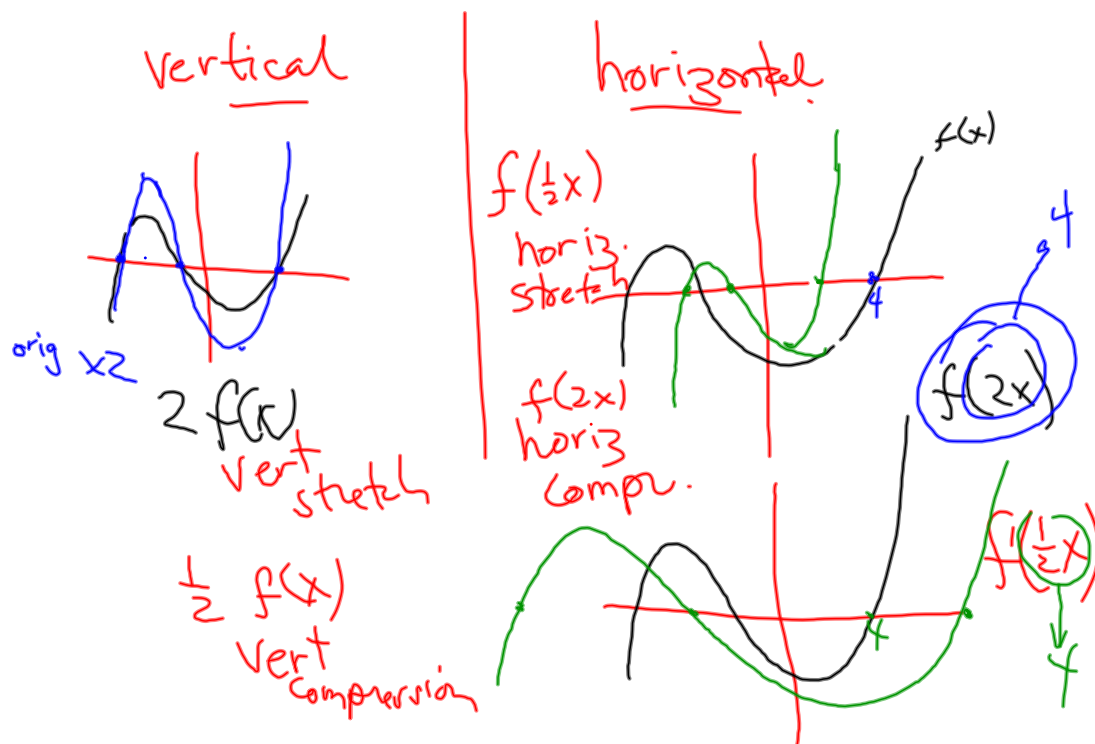
(v) horizontal stretch

$\textcircled{2}$ horizontal stretch

$\textcircled{3}$ horizontal translation
right 6

$(x-6)$

$\textcircled{4}$ reflect across x-axis



$$\frac{3.4/32}{\frac{1}{x}} \longrightarrow$$

$$\frac{3}{4-2x}$$

① reflect across y-axis? ✓

② horizontal stretch/comp?

③ hor translation?

④ reflect across y? ✗

⑤ vertical trans?

④a vertical stretch/comp
vertical stretch

$$\frac{3}{-(2x-4)}$$

$$\frac{3}{\textcircled{1}(-2)(x-2)} \quad \textcircled{2} \quad \textcircled{3}$$

$$\textcircled{4} \left(\frac{3}{-2(x-2)} \right)$$

$$(32')$$

$$\frac{3}{4-2x}$$

$$= -\frac{3}{2} \left(\frac{1}{x-2} \right)$$